

MORBIDITY AND MORTALITY WEEKLY REPORT

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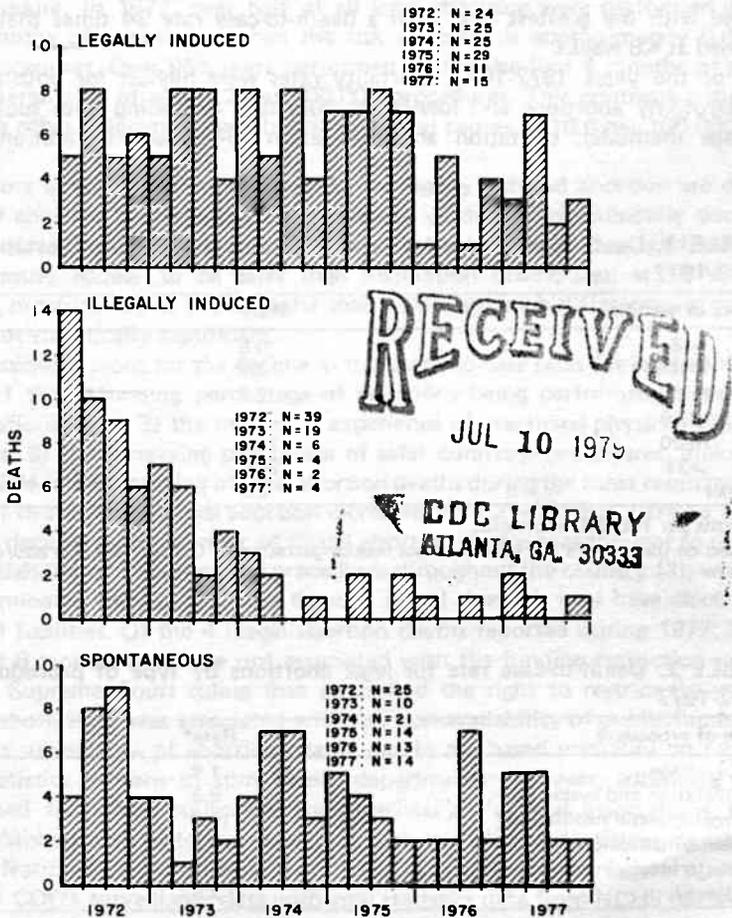
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Surveillance Summary

Abortion-Related Mortality — United States, 1977

In 1977, for the first year since 1972, there was an increase in the total annual number of legally induced, illegally induced, and spontaneous abortion-related deaths (Figure 1).

FIGURE 1. Abortion-related deaths, by category* and quarter, United States, 1972-1977



*Excludes unknown category.

Abortion-Related Mortality — Continued

Thirty-three women died from abortion in 1977 compared with 27 in 1976, 47 in 1975, 53 in 1974, 56 in 1973, and 90 in 1972. Despite the increases in absolute numbers, the death-to-case rates for legal abortion in both 1976 and 1977 were markedly lower than in the years 1972 through 1975.

In 1977, a total of 1,079,430 legal abortions were reported to CDC. Fifteen women died in association with these procedures that year—compared with 11 in 1976, 29 in 1975, 25 in 1974, 25 in 1973, and 24 in 1972 (Figure 1). With the total number of reported legal abortions each year used as the denominator, the overall death-to-case rate for legal abortions was 1.4 per 100,000 abortions in 1977, compared with 1.1 in 1976, 3.4 in 1975, 3.3 in 1974, and 4.1 in both 1973 and 1972.

The aggregated data for the years 1972-1977 show the risk of death from legal abortion was lowest for women whose abortions were performed at ≤ 8 menstrual weeks' gestation; the death-to-case rate was 0.6 per 100,000 procedures for this group (Table 1). The death-to-case rate increased by approximately 40%-60% for each week after the eighth week. Abortions performed at 9-10 weeks carried nearly 3 times the risk in terms of mortality than those performed earlier. Abortions performed at ≥ 21 weeks were associated with the greatest risk, with a death-to-case rate 34 times that of abortions performed at ≤ 8 weeks.

For the years 1972-1977, mortality rates were highest for both hysterectomy and hysterotomy abortions and lowest for curettage (including both suction and sharp-curettage methods); dilatation and evacuation (D&E) and instillation procedures were

TABLE 1. Death-to-case rate for legal abortions by weeks of gestation, United States, 1972-1977

Weeks of gestation	Rate*	Relative risk†
≤ 8	0.6	1.0
9-10	1.7	2.8
11-12	2.7	4.5
13-15	7.5	12.5
16-20	14.6	24.3
≥ 21	20.5	34.2
Overall	2.6	

*Deaths per 100,000 abortions.

†Based on index rates for ≤ 8 menstrual weeks' gestation of 0.6 per 100,000 abortions.

TABLE 2. Death-to-case rate for legal abortions by type of procedure, United States, 1972-1977

Type of procedure	Rate*	Relative risk†
Curettage	1.2	1.0
Dilatation and evacuation	8.3	6.9
Prostaglandin instillation‡	10.8	9.0
Saline instillation	15.5	12.9
Hysterotomy/hysterectomy	45.3	37.7
Overall	2.6	

*Deaths per 100,000 abortions.

†Based on index rate for curettage of 1.2 per 100,000 abortions.

‡Includes deaths from instillation of other agents.

Abortion-Related Mortality – Continued

intermediate in terms of risk (Table 2). For these particular methods, the risk of death is also influenced by increasing gestational age. Curettage procedures had a death-to-case rate of 1.2 per 100,000 abortions, compared to 8.3 for D&E procedures, 10.8 for instillation of prostaglandins and/or other agents, 15.5 for the instillation of hypertonic saline, and 45.3 for hysterotomy/hysterectomy operations.

Four deaths were associated with illegally induced abortion in 1977—the first increase in the annual number of such deaths since 1972. There were 2 illegal abortion deaths in 1976, 4 in 1975, 6 in 1974, 19 in 1973, and 39 in 1972 (Figure 1).

There were 14 deaths from spontaneous abortion in the United States in 1977, compared to 13 in 1976 (Figure 1). No deaths from spontaneous abortion associated with an intrauterine device in situ were reported in 1977.

Reported by the Abortion Surveillance Br and the Statistical Services Br, Family Planning Evaluation Div, Bur of Epidemiology, CDC.

Editorial Note: In terms of the risk of death, legally induced abortion is a relatively safe surgical procedure. In 1977, over half of all legal abortions were performed within the first 2 months of pregnancy, when the risk of death is approximately 0.6 for every 100,000 procedures. Over 95% were performed during the first 4 months of pregnancy with an overall risk of about 2 per 100,000 procedures. This contrasts with the risk of death from other pregnancy- and childbirth-related causes of 10.6 per 100,000 live births (1,2).

The main factors affecting the mortality risks for legally induced abortion are delay and the choice of abortion procedure. The relative risk of dying approximately doubles for each 2 weeks after 8 weeks' gestation (2). Until 16 weeks' gestation or later, uterine evacuation techniques appear to be safer than instillation procedures; at 16 weeks' gestation or later, prostaglandin is slightly safer than saline, although differences in death-to-case rates are not statistically significant.

Among the possible reasons for the decline in the death-to-case rates for legal abortion after 1975 are 1) the increasing percentage of abortions being performed during the earlier, safer gestational ages, 2) the increasing experience of practicing physicians in performing abortions, 3) the increasing percentage of safer curettage procedures, including D&E, and 4) possible underreporting of legal abortion deaths during the most recent years.

The number of deaths from illegal abortion increased from 2 to 4 from 1976 to 1977. Before 1977, the decline in the number of illegal abortion deaths was thought to reflect the increasing availability of the safer legal procedures throughout the country (3); women who formerly terminated their pregnancies through illegal channels may have elected to use the safer legal facilities. Of the 4 illegal abortion deaths reported during 1977, 3 occurred in the first 6 months and were not associated with the funding restriction resulting from a 1977 Supreme Court ruling that states had the right to restrict the use of public funds for abortion; 1 was associated with this non-availability of public funds (4).

Data for CDC's surveillance of abortion-related deaths are based primarily on reports from the vital statistics sections of state health departments; however, additional data have been obtained from such sources as state medical or hospital associations, CDC investigations, published case histories, state maternal mortality committees, as well as records from the National Center for Health Statistics (NCHS) and other federal agencies.

Comparison of CDC's surveillance data with vital statistics data from NCHS has shown CDC's surveillance techniques have identified more deaths as abortion-related and have specifically categorized more cases—that is, as legal, illegal, or spontaneous (5).

Abortion-Related Mortality — Continued

Nevertheless, because of the relatively small numbers of reported abortion-related deaths, it is difficult to determine long-term trends. It is therefore important that reports of all deaths related to abortions occurring in the United States be reported to state and local health departments and to CDC. The appropriate address and telephone number for the latter are: Abortion Surveillance Branch, Family Planning Evaluation Division, ATTN: Abortion Mortality, CDC, Atlanta, Georgia 30333. (404) 329-3131.

References

1. National Center for Health Statistics: Final mortality statistics, 1977. Monthly Vital Statistics Report 28(Suppl):33, 1979
2. Cates W Jr, Tietze C: Standardized mortality rates associated with legal abortion: United States, 1972-1975. Fam Plann Perspect 10:109-112, 1978
3. Cates W Jr, Rochat RW: Illegal abortion in the United States, 1972-1974. Fam Plann Perspect 8:86-92, 1976
4. MMWR 26:361, 1977
5. Cates WJ, Smith JC, Rochat RW, Patterson JE, Dolman A: Assessment of surveillance and vital statistics data for monitoring abortion mortality, United States, 1972-1975. Am J Epidemiol 108:200-206, 1978

TABLE I. Summary — cases of specified notifiable diseases, United States
[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	2 nd WEEK ENDING		MEDIAN 1974-1978**	CUMULATIVE, FIRST 26 WEEKS		
	June 30, 1978	July 1, 1978*		June 30, 1978	July 1, 1978*	MEDIAN 1974-1978**
Aseptic meningitis	125	112	69	1,534	1,238	1,042
Brucellosis	3	4	4	58	80	98
Chickenpox	2,565	2,605	2,185	164,267	116,861	116,861
Diphtheria	-	9	3	58	44	116
Encephalitis: Primary (arthropod-borne & unsp.)	12	15	18	260	302	341
Post-infectious	7	6	4	122	107	130
Hepatitis, Viral: Type B	243	294	290	6,926	7,556	7,419
Type A	544	618	618	14,429	14,427	17,701
Type unspecified	183	159	159	5,240	4,111	4,285
Malaria	14	14	14	274	297	187
Measles (rubeola)	288	553	696	10,686	21,232	21,232
Meningococcal infections: Total	42	37	27	1,585	1,394	920
Civilian	42	37	27	1,577	1,375	907
Military	-	-	-	8	19	17
Mumps	226	321	495	10,277	12,019	30,283
Pertussis	28	36	31	617	971	639
Rubella (German measles)	180	426	312	9,701	15,237	13,983
Tetanus	1	2	2	27	35	31
Tuberculosis	668	524	669	14,129	14,302	15,229
Tularemia	-	-	6	65	47	63
Typhoid fever	12	7	9	220	242	173
Typhus fever, tick-borne (Rky. Mt. spotted)	40	58	41	322	357	303
Veneral diseases:						
Gonorrhea: Civilian	17,910	19,150	19,150	473,969	466,681	469,698
Military	424	368	368	13,323	12,449	13,579
Syphilis, primary & secondary: Civilian	415	416	391	11,942	10,324	10,324
Military	4	5	5	143	151	153
Rabies in animals	96	63	63	2,346	1,572	1,474

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1978		CUM. 1978
Anthrax	-	Poliomyelitis: Total	19
Botulism	10	Paralytic	16
Congenital rubella syndrome	28	Pittacosis (Tex. 1)	60
Leprosy (Tex. 1)	82	Rabies in man	1
Leptospirosis (Fla. 1, Tex. 1)	16	Trichinosis	65
Plague	7	Typhus fever, flea-borne (endemic, murine)(Tex. 1, N.Mex. 1)	21

* Delayed reports received for calendar year 1978 are used to update last year's weekly and cumulative totals.

** Medians for gonorrhea and syphilis are based on data for 1976-1978.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending June 30, 1979, and July 1, 1978 (26th week)

REPORTING AREA	ASEPTIC MENINGITIS			BRUCELLOSIS		CHICKEN POX		DIPHTHERIA			ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
	Primary		Post-infectious		B	A	Unspecified	1978		CUM. 1978		1979	1978	1979	1978	CUM. 1978		
	1979	1978	1979	1978	1979	CUM. 1978	1979	1978*	1979	1979	1978	1979	1978	1979	1978	1979	1978	CUM. 1978
UNITED STATES	125	3	2,565	-	58		12	15	7	243	544	183	14	274				
NEW ENGLAND	3	-	383	-	-		-	-	-	8	14	12	2	18				
Maine	-	-	9	-	-		-	-	-	-	2	1	-	1				
N.H.†	-	-	4	-	-		-	-	-	-	-	-	-	-				
Vt.†	-	-	7	-	-		-	-	-	3	1	-	-	-				
Mass.	-	-	134	-	-		-	-	-	2	6	11	-	4				
R.I.	1	-	55	-	-		-	-	-	-	2	-	-	5				
Conn.	2	-	174	-	-		-	-	-	3	3	-	-	8				
MID. ATLANTIC	20	-	278	-	-		4	-	-	48	50	15	-	35				
Upstate N.Y.	2	-	208	-	-		-	-	-	5	22	2	-	8				
N.Y. City	4	-	56	-	-		2	-	-	10	8	5	-	17				
N.J.	11	-	NN	-	-		1	-	-	16	4	7	-	4				
Pa.	3	-	14	-	-		1	-	-	17	16	1	-	6				
E.N. CENTRAL	13	-	1,238	-	1		-	5	2	25	67	26	2	18				
Ohio	-	-	191	-	-		-	4	2	5	22	-	-	5				
Ind.†	1	-	56	-	-		-	-	-	3	4	7	-	1				
Ill.	6	-	234	-	-		-	-	-	2	22	7	-	5				
Mich.	6	-	497	-	-		-	1	-	10	10	11	1	7				
Wis.†	-	-	260	-	1		-	-	-	5	9	1	-	-				
W.N. CENTRAL	1	-	46	-	-		-	2	2	16	27	7	-	11				
Minn.	-	-	2	-	-		-	1	2	7	3	-	-	3				
Iowa	-	-	12	-	-		-	-	-	3	10	2	-	1				
Mo.	-	-	5	-	-		-	1	-	5	12	5	-	3				
N. Dak.†	-	-	2	-	-		-	-	-	-	-	-	-	-				
S. Dak.	-	-	4	-	-		-	-	-	1	2	-	-	-				
Nebr.	-	-	20	-	-		-	-	-	-	-	-	-	2				
Kans.	1	-	1	-	-		-	-	-	-	-	-	-	2				
S. ATLANTIC	21	3	193	-	-		2	3	3	36	68	19	3	40				
Del.	1	-	7	-	-		-	-	-	-	1	-	-	1				
Md.	1	-	73	-	-		1	-	1	-	-	-	-	5				
D.C.	-	-	-	-	-		-	-	-	-	-	-	-	5				
Va.†	5	3	11	-	-		-	-	1	10	3	1	1	11				
W. Va.†	-	-	70	-	-		-	-	-	3	2	-	1	2				
N.C.†	3	-	NN	-	-		1	1	-	8	8	3	-	3				
S.C.†	4	-	-	-	-		-	2	-	2	2	1	-	1				
Ga.	-	-	-	-	-		-	-	-	1	19	-	-	2				
Fla.	7	-	32	-	-		-	-	1	12	33	14	1	10				
E.S. CENTRAL	13	-	160	-	-		3	-	-	24	35	3	-	6				
Ky.	2	-	157	-	-		-	-	-	2	3	-	-	-				
Tenn.	4	-	NN	-	-		2	-	-	12	12	1	-	-				
Ala.	5	-	2	-	-		-	-	-	7	5	2	-	2				
Miss.	2	-	1	-	-		1	-	-	3	15	-	-	4				
W.S. CENTRAL	30	-	31	-	-		1	-	-	17	113	39	-	18				
Ark.	-	-	1	-	-		1	-	-	2	6	3	-	-				
La.†	-	-	NN	-	-		-	-	-	6	8	5	-	2				
Okla.	4	-	-	-	-		-	-	-	1	5	8	-	2				
Tex.	26	-	30	-	-		-	-	-	8	94	23	-	14				
MOUNTAIN	6	-	83	-	1		1	-	-	7	52	25	-	7				
Mont.	4	-	32	-	-		-	-	-	-	3	-	-	-				
Idaho	-	-	1	-	-		-	-	-	1	1	-	-	-				
Wyo.	-	-	-	-	-		-	-	-	-	-	-	-	1				
Colo.	1	-	49	-	-		1	-	-	1	5	4	-	3				
N. Mex.	-	-	1	-	-		-	-	-	1	8	-	-	-				
Ariz.	-	-	NN	-	1		-	-	-	1	28	17	-	3				
Utah	-	-	-	-	-		-	-	-	1	3	4	-	-				
Nev.	1	-	-	-	-		-	-	-	2	4	-	-	-				
PACIFIC	18	-	153	-	56		1	5	-	62	118	37	7	121				
Wash.	2	-	141	-	55		-	1	-	2	19	5	1	5				
Oreg.	5	-	1	-	-		-	-	-	13	15	-	1	5				
Calif.†	9	-	-	-	1		1	3	-	47	82	32	5	110				
Alaska†	1	-	2	-	-		-	-	-	-	1	-	-	-				
Hawaii	1	-	9	-	-		-	-	-	-	1	-	-	1				
Guam†	NA	NA	NA	NA	-		NA	-	-	NA	NA	NA	NA	-				
P.R.	-	-	21	-	-		-	-	-	1	3	6	-	1				
V.I.	-	-	-	-	-		-	-	-	-	-	-	-	-				
Pac. Trust Terr.	NA	NA	NA	NA	-		NA	-	-	NA	NA	NA	NA	-				

NN: Not notifiable. NA: Not available.
 *Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.
 †The following delayed reports will be reflected in next week's cumulative totals: Asep. meng.: Ind. +1, La. -2; Chickenpox: N.H. +3, W.Va. +1, Calif. +60, Alaska -20, Guam +15; Enceph.: Ind. +2, N.C. -1; Hep.B.: Vt. +1, Guam +3; Hep.A.: Vt. +1, N.Dak. +2, S.C. +5, Guam +3; Hep. unsp.: Va. -1, S.C. +5, Guam +9; Malaria: Wis. +1.

TABLE III (Cont'd). Cases of specified notifiable diseases, United States, weeks ending June 30, 1979, and July 1, 1978 (26th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1978	CUM. 1978	CUM. 1978*	1978	CUM. 1978	CUM. 1978*	1978	CUM. 1978	1978	1978	CUM. 1978	CUM. 1978
UNITED STATES	288	10,686	21,232	42	1,585	1,394	226	10,277	28	180	9,701	27
NEW ENGLAND	2	284	1,895	-	74	76	4	356	2	22	1,335	3
Maine	-	15	1,298	-	3	5	-	128	-	-	61	-
N.H.	-	38	44	-	8	6	-	4	-	-	113	-
Va.	1	113	24	-	5	2	-	6	-	1	390	-
Mass.	-	12	205	-	20	28	2	30	2	19	449	2
R.I.	-	103	7	-	5	14	-	23	-	-	81	-
Conn.	1	3	317	-	33	21	2	165	-	2	241	1
MID. ATLANTIC	80	1,289	1,804	10	231	225	95	971	-	38	1,743	5
Upstate N.Y.	16	594	1,203	2	81	66	3	135	-	17	934	1
N.Y. City	51	610	200	1	60	55	8	101	-	19	236	3
N.J.	1	51	63	1	55	47	52	505	-	1	310	-
Pa.	12	34	338	6	35	57	32	230	-	1	263	1
E.N. CENTRAL	78	2,747	9,728	5	152	138	65	4,486	12	42	2,280	2
Ohio	22	205	444	2	56	32	14	1,618	-	14	113	1
Ind.	4	165	161	2	34	24	11	249	1	3	692	-
Ill.	16	1,222	1,037	-	3	27	13	817	-	8	153	-
Mich.	18	721	6,714	1	45	44	6	855	9	12	1,114	1
Wis.	18	434	1,372	-	14	11	21	947	2	5	208	-
W.N. CENTRAL	24	1,423	353	2	45	55	2	624	-	7	395	-
Minn.	20	925	36	1	10	10	-	6	-	1	35	-
Iowa	-	15	53	-	5	9	1	220	-	-	51	-
Mo.	4	411	7	1	22	23	1	186	-	-	39	-
N. Dak.	-	10	184	-	1	3	-	1	-	-	8	-
S. Dak.	-	1	-	-	2	2	-	4	-	-	2	-
Nebr.	-	-	5	-	-	-	-	6	-	6	178	-
Kans.	-	57	68	-	5	8	-	201	-	-	82	-
S. ATLANTIC	68	1,565	4,394	6	393	339	10	393	5	28	1,101	6
Del.	-	1	5	-	3	1	1	23	-	1	4	-
Md.	-	7	34	1	35	15	5	72	-	1	24	-
D.C.	1	1	47	-	2	1	-	1	-	-	1	-
Va. †	28	240	2,583	1	56	42	2	75	-	17	183	1
W. Va.	1	50	980	-	7	8	-	80	1	1	97	-
N.C.	3	107	92	1	55	70	1	58	-	2	486	3
S.C.	5	143	188	1	48	23	-	2	-	-	59	-
Ga.	-	344	15	-	62	42	-	3	-	-	7	-
Fla.	30	676	450	2	125	137	1	79	4	6	240	2
E.S. CENTRAL	3	159	1,309	2	118	113	34	1,071	2	7	246	4
Ky.	-	23	104	1	23	20	33	855	-	6	62	-
Tenn.	-	47	880	-	35	29	-	85	2	1	78	-
Ala.	3	70	101	-	28	35	1	17	-	-	36	4
Miss.	-	19	224	1	32	29	-	114	-	-	70	-
W.S. CENTRAL	14	882	886	4	272	210	6	1,553	4	4	195	7
Ark.	-	6	14	-	24	17	-	755	-	-	5	2
La. †	9	243	311	1	112	80	1	36	2	-	25	1
Okla.	-	22	12	-	21	16	-	-	-	-	22	-
Tex.	5	611	549	3	115	97	5	762	2	4	143	4
MOUNTAIN	-	252	209	3	68	31	5	238	1	13	444	-
Mont.	-	55	103	1	6	2	-	5	-	-	62	-
Idaho	-	4	1	-	5	2	-	8	-	7	193	-
Wyo.	-	36	-	-	1	-	-	-	-	-	-	-
Colo.	-	32	29	-	4	2	1	67	-	-	27	-
N. Mex. †	-	30	-	-	4	7	4	11	1	2	9	-
Ariz.	-	69	18	1	31	11	-	47	-	3	124	-
Utah	-	15	44	-	8	4	-	89	-	1	28	-
Nev.	-	11	14	1	9	3	-	11	-	-	1	-
PACIFIC	19	2,081	654	10	232	207	5	585	2	19	1,962	-
Wash. †	11	1,100	86	3	40	35	1	179	-	2	163	-
Oreg.	-	55	136	-	13	19	1	56	-	-	76	-
Calif.	7	847	428	7	166	145	-	266	2	16	1,706	-
Alaska	-	17	-	-	5	5	-	8	-	-	2	-
Hawaii	1	62	4	-	8	3	3	76	-	1	15	-
Guam †	NA	2	25	-	-	-	NA	6	NA	NA	3	-
P.R.	32	284	192	-	1	2	7	468	1	-	30	5
V.I. †	-	4	6	-	2	1	-	4	-	-	-	-
Pac. Trust Terr.	NA	6	544	-	1	2	NA	16	NA	NA	1	-

NA: Not available.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Measles: Va. -1, N.Mex. +1, Wash. +5, Guam +1; Men. Inf.: V.I. +1; Mumps: La. -1, Guam +1; Pertussis: Va. -1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending June 30, 1979, and July 1, 1978 (26th week)

REPORTING AREA	TUBERCULOSIS		TULA-REMIA		TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)							RABIES (In Animals)
									GONORRHEA			SYPHILIS (Pri. & Sec.)				
	1978	CUM. 1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	1978	CUM. 1978	CUM. 1978*	1978	CUM. 1978	CUM. 1978*	CUM. 1978		
UNITED STATES	668	14,129	65	12	220	40	322	17,910	473,969	466,681	415	11,942	10,324	2,346		
NEW ENGLAND	8	377	1	1	15	-	2	460	12,207	12,095	5	222	309	24		
Maine †	1	27	-	-	1	-	-	42	847	906	-	5	7	18		
N.H. †	-	8	-	-	-	-	-	17	434	553	-	12	5	1		
Vt.	1	20	-	-	-	-	-	15	282	294	-	1	3	-		
Mass.	-	201	1	-	9	-	2	201	4,894	5,318	5	133	193	4		
R.I.	1	36	-	-	2	-	-	23	983	862	-	7	13	-		
Conn.	5	85	-	1	3	-	-	162	4,767	4,162	-	64	88	1		
MID. ATLANTIC	87	2,248	1	4	34	1	13	1,866	50,200	50,710	54	1,773	1,407	20		
Upstate N.Y.	15	395	1	-	6	1	11	292	8,126	8,126	5	132	95	16		
N.Y. City †	41	838	-	-	15	-	1	721	19,018	20,025	35	1,189	1,003	4		
N.J.	5	399	-	3	10	-	1	234	9,498	9,075	11	245	156	4		
Pa.	26	616	-	1	3	-	-	619	13,558	13,367	3	207	153	-		
E.N. CENTRAL	94	1,968	-	1	17	-	8	2,803	74,631	68,220	43	1,619	1,077	199		
Ohio †	7	371	-	-	3	-	2	979	20,361	17,666	-	291	211	14		
Ind.	13	256	-	-	-	-	2	110	7,058	6,671	6	111	55	45		
Ill.	43	742	-	-	5	-	3	870	23,531	21,320	25	978	665	102		
Mich.	25	510	-	1	8	-	1	844	17,244	16,139	12	192	111	3		
Wis.	6	89	-	-	1	-	-	NA	6,437	6,424	NA	47	35	35		
W.N. CENTRAL	41	469	9	-	10	-	19	843	22,718	23,498	11	163	235	475		
Minn.	9	71	-	-	2	-	-	69	3,863	4,156	1	46	105	93		
Iowa	4	42	-	-	2	-	10	55	2,743	2,583	1	23	23	90		
Mo.	21	254	7	-	4	-	4	452	9,726	9,908	8	67	62	155		
N. Dak.	1	13	-	-	-	-	-	22	383	436	1	2	2	23		
S. Dak.	3	31	1	-	-	-	-	28	785	844	-	1	1	41		
Nebr.	-	3	1	-	1	-	-	57	1,580	1,785	-	1	7	-		
Kent.	3	55	-	-	1	-	5	160	3,638	3,786	-	23	35	73		
S. ATLANTIC	161	3,289	2	1	27	28	170	5,029	113,886	112,959	126	2,901	2,764	303		
Dal.	1	30	-	-	2	-	2	116	1,885	1,551	-	17	5	-		
Md.	21	430	-	1	7	-	18	583	13,779	14,289	7	198	218	9		
D.C.	11	171	-	-	1	-	1	324	7,320	7,573	8	228	216	-		
Va. †	16	377	-	-	3	7	44	610	11,044	10,609	9	266	241	5		
W. Va.	5	126	-	-	2	-	3	51	1,588	1,644	1	39	8	-		
N.C. †	15	504	-	-	-	19	63	683	16,712	15,692	8	235	257	3		
S.C. †	26	255	1	-	3	2	20	514	10,709	11,178	8	140	132	99		
Ge.	32	477	1	-	-	19	1,017	22,236	22,874	27	783	666	164			
Fla. †	34	919	-	-	11	-	1,131	28,613	28,549	58	995	1,021	23			
E.S. CENTRAL	87	1,349	12	-	10	7	51	1,728	40,829	40,522	20	762	509	150		
Ky.	24	357	2	-	4	-	7	214	5,370	4,962	5	81	67	64		
Tenn.	28	373	10	-	1	7	36	770	14,608	14,830	11	335	175	51		
Ala.	21	309	-	-	5	-	7	409	12,079	11,959	2	145	76	34		
Miss.	14	310	-	-	-	-	1	335	8,772	8,771	2	201	191	1		
W.S. CENTRAL	86	1,708	28	1	25	3	56	2,494	62,096	65,145	97	2,154	1,605	961		
Ark.	10	126	17	-	-	1	18	264	4,690	4,674	7	70	40	216		
La. †	20	381	2	-	3	-	1	410	10,992	10,749	29	509	332	17		
Okla. †	5	179	5	-	-	2	29	276	5,716	6,119	6	41	47	152		
Tex.	51	1,022	4	1	22	-	8	1,544	40,698	43,603	55	1,534	1,186	576		
MOUNTAIN	13	415	8	-	20	1	3	806	18,708	17,211	24	232	198	49		
Mont.	1	16	1	-	-	-	1	20	852	1,049	-	6	7	4		
Idaho	-	3	-	-	1	-	-	24	787	646	1	16	5	1		
Wyo.	-	3	-	-	1	-	-	32	442	387	-	5	4	-		
Colo.	-	66	1	-	12	-	-	166	4,983	4,839	-	50	54	10		
N. Mex.	6	78	1	-	1	-	-	172	2,417	2,452	7	46	53	24		
Ariz.	5	197	-	-	3	-	-	244	5,243	4,371	16	76	45	9		
Utah	-	13	5	-	-	-	-	25	971	976	-	3	11	1		
Nev.	1	36	-	-	2	1	2	123	3,013	2,451	-	30	19	-		
PACIFIC	91	2,306	4	4	62	-	-	1,881	78,694	76,321	35	2,116	2,220	165		
Wash.	9	127	3	-	1	-	-	193	6,801	5,803	NA	111	102	-		
Oreg.	-	106	-	-	-	-	-	227	5,160	5,321	2	93	75	1		
Calif.	74	1,862	1	4	53	-	-	1,229	62,716	61,298	32	1,848	2,013	162		
Alaska	-	44	-	-	1	-	-	115	2,610	2,444	-	12	7	2		
Hawaii	8	167	-	-	7	-	-	117	1,407	1,455	1	52	23	-		
Guam †	NA	21	-	NA	-	NA	-	NA	34	62	NA	-	-	-		
P.R.	36	159	-	-	3	-	-	35	1,021	1,196	6	242	225	13		
V.I. †	-	3	-	-	1	-	-	1	87	109	-	5	8	-		
Pac. Trust Terr.	NA	13	-	NA	-	NA	-	NA	171	245	NA	-	-	-		

NA: Not available.
 *Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.
 †The following delayed reports will be reflected in next week's cumulative totals: TB: Ohio -4, N.C. -1, S.C. -1, Fla. -1, Guam +8; GC: NYC +958 civ., La. -27 civ., Okla +75 mil., Guam +6 civ. +10 mil., V.I. +1 civ.; Syphilis: NYC +58, La. -10, V.I. +1; An. rabies: Maine +1, N.H. +1, Va. -1.

TABLE IV. Deaths in 121 U.S. cities,* week ending
June 30, 1979 (26th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL	REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1			ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	631	425	140	32	21	39	S. ATLANTIC	1,266	688	340	89	102	40
Boston, Mass.	194	119	44	14	12	10	Atlanta, Ga.	160	88	39	14	12	3
Bridgeport, Conn.	41	31	8	1	-	1	Baltimore, Md.	316	171	87	27	17	-
Cambridge, Mass.	24	18	6	-	-	1	Charlotte, N.C.	54	21	16	7	7	3
Fall River, Mass.	30	14	14	2	-	1	Jacksonville, Fla.	75	42	24	2	3	1
Hartford, Conn.	58	37	14	4	2	4	Miami, Fla.	116	63	33	6	9	7
Lowell, Mass.	28	21	6	-	-	1	Norfolk, Va.	46	23	13	4	4	5
Lynn, Mass.	17	12	4	-	-	2	Richmond, Va.	92	43	21	3	24	4
New Bedford, Mass.	22	18	4	-	-	-	Savannah, Ga.	46	23	12	3	3	4
New Haven, Conn.	46	26	12	3	3	2	St. Petersburg, Fla.	98	82	12	1	2	6
Providence, R.I.	44	35	4	2	1	7	Tampa, Fla.	62	40	15	-	6	4
Somerville, Mass.	9	7	2	-	-	1	Washington, D.C.	164	70	61	19	11	1
Springfield, Mass.	40	28	9	1	2	2	Wilmington, Del.	37	22	7	3	4	2
Waterbury, Conn.	27	23	3	1	-	2							
Worcester, Mass.	51	36	10	4	1	5							
							E.S. CENTRAL	622	376	154	38	27	22
MID. ATLANTIC	2,490	1,599	601	140	64	105	Birmingham, Ala.	96	57	26	6	3	-
Albany, N.Y.	54	33	12	3	4	1	Chattanooga, Tenn.	36	20	9	3	1	1
Allentown, Pa.	23	14	9	-	-	-	Knoxville, Tenn.	28	19	5	3	-	-
Buffalo, N.Y.	121	79	32	6	2	13	Louisville, Ky.	100	61	22	6	6	8
Camden, N.J.	42	22	13	4	1	-	Memphis, Tenn.	153	94	36	8	8	5
Elizabeth, N.J.	36	24	8	1	2	1	Mobile, Ala.	64	37	16	7	2	1
Erie, Pa.†	42	29	12	-	-	5	Montgomery, Ala.	46	28	14	1	2	3
Jersey City, N.J.	51	35	9	4	1	-	Nashville, Tenn.	99	60	26	4	5	4
Newark, N.J.	44	17	17	5	1	4							
N.Y. City, N.Y.	1,310	857	291	81	28	44	W.S. CENTRAL	1,227	651	331	111	57	35
Patterson, N.J.	24	15	4	1	2	1	Austin, Tex.	51	36	7	5	1	3
Philadelphia, Pa.†	306	189	84	17	10	19	Baton Rouge, La.	49	31	12	2	1	3
Pittsburgh, Pa.†	53	31	17	2	3	2	Corpus Christi, Tex.	31	21	7	2	-	-
Reading, Pa.	41	30	7	3	1	1	Dallas, Tex.	147	80	37	10	10	2
Rochester, N.Y.	112	73	29	5	2	5	El Paso, Tex.	31	12	9	4	2	4
Schenectady, N.Y.	25	18	4	1	1	2	Fort Worth, Tex.	100	62	21	9	4	2
Scranton, Pa.†	23	15	7	-	-	1	Houston, Tex.	318	130	112	39	9	5
Syracuse, N.Y.	97	55	26	6	5	2	Little Rock, Ark.	64	38	19	3	2	2
Tranton, N.J.	40	29	9	-	1	1	New Orleans, La.	141	67	38	19	12	4
Utica, N.Y.	21	14	6	1	-	-	San Antonio, Tex.	154	87	39	7	4	4
Yonkers, N.Y.	25	20	5	-	-	3	Shreveport, La.	45	30	7	4	3	2
							Tulsa, Okla.	96	56	23	7	4	5
E.N. CENTRAL	2,183	1,293	595	143	80	68	MOUNTAIN	578	331	137	46	30	13
Akron, Ohio	71	45	20	1	3	-	Albuquerque, N. Mex.	67	36	19	5	2	3
Canton, Ohio	49	32	14	-	1	3	Colorado Springs, Colo.	39	22	9	4	1	1
Chicago, Ill.	538	298	151	45	21	15	Denver, Colo.	124	70	26	14	7	1
Cincinnati, Ohio	158	89	52	8	2	5	Las Vegas, Nev.	56	33	11	9	-	-
Cleveland, Ohio	157	83	53	14	5	2	Ogden, Utah	18	14	2	-	1	4
Columbus, Ohio	135	83	30	13	5	2	Phoenix, Ariz.	133	71	36	6	10	4
Dayton, Ohio	106	63	33	4	3	2	Pueblo, Colo.	18	10	5	2	1	2
Detroit, Mich.	234	124	68	17	13	8	Salt Lake City, Utah	48	23	11	3	8	1
Evansville, Ind.	34	21	11	2	-	1	Tucson, Ariz.	75	52	18	3	-	-
Fort Wayne, Ind.	55	36	13	1	2	1							
Gary, Ind.	9	3	2	2	-	-							
Grand Rapids, Mich.	39	32	4	1	-	3							
Indianapolis, Ind.	137	75	43	10	5	5	PACIFIC	1,602	962	392	132	52	39
Madison, Wis.	21	17	2	1	-	2	Berkeley, Calif.	12	9	2	-	-	-
Milwaukee, Wis.	154	106	35	10	3	8	Fresno, Calif.	55	32	16	1	1	1
Peoria, Ill.	31	23	3	3	1	8	Glendale, Calif.	18	12	5	1	-	-
Rockford, Ill.	38	18	8	3	8	-	Honolulu, Hawaii	48	27	11	6	3	2
South Bend, Ind.	73	54	13	3	2	3	Long Beach, Calif.	101	64	23	9	5	1
Toledo, Ohio	74	45	20	3	3	-	Los Angeles, Calif.	427	252	94	48	10	20
Youngstown, Ohio	70	46	20	2	1	-	Oakland, Calif.	56	37	12	3	-	1
							Pasadena, Calif.	22	16	3	2	1	1
							Portland, Oreg.	147	89	40	8	7	-
W.N. CENTRAL	768	480	175	55	24	16	Sacramento, Calif.	74	51	14	5	2	-
Des Moines, Iowa	69	45	15	4	3	2	San Diego, Calif.	121	71	30	8	6	2
Duluth, Minn.	21	14	5	1	-	1	San Francisco, Calif.	146	92	39	10	4	3
Kansas City, Kans.	37	19	10	5	1	1	San Jose, Calif.	139	75	38	16	5	4
Kansas City, Mo.	134	88	23	13	5	2	Seattle, Wash.	136	79	38	8	5	2
Lincoln, Neb.	23	14	7	-	2	1	Spokane, Wash.	65	39	17	4	2	1
Minneapolis, Minn.	100	65	21	6	-	1	Tacoma, Wash.	35	17	10	3	1	-
Omaha, Neb.	83	52	20	3	5	-							
St. Louis, Mo.	162	102	37	13	3	2							
St. Paul, Minn.	63	36	19	5	2	3	TOTAL	11,367	6,805	2,865	786	457	377
Wichita, Kans.	76	45	18	5	3	3							

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza

†Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

Follow-up on Poliomyelitis — United States, Canada

Since the last report (1), 2 additional epidemic-associated cases of paralytic poliomyelitis have been confirmed. One is in a 16-year-old, unvaccinated Amish male from Buchanan County, Iowa, where 2 other paralytic cases were previously reported (2); type 1 virus was isolated from this boy's stool. The other new case is in a 9-month-old boy from Chester County, Pennsylvania (from a town adjacent to the Lancaster County residence of the most recently reported Pennsylvania case [1]). The infant became ill on June 3, 5 days after receiving his first dose of trivalent oral poliovirus vaccine (TOPV). Poliovirus type 2 was isolated from this patient's stool; results of serologic tests are pending.

These additional cases bring the 1979 total, as of July 3, to 15 confirmed, epidemic-associated cases in Canada (2 cases) and the United States (Pennsylvania, 8; Iowa, 3; Wisconsin, 2). The total number of suspected paralytic cases is 2—1 each from Wisconsin and Missouri.

In addition, poliovirus type 1 has been isolated from asymptomatic Amish persons from 6 different areas where paralytic poliomyelitis has not yet appeared. These are Charles and St. Mary's counties, Maryland (January; 37 of 102 positive); Jefferson County, Pennsylvania (May 21; 14 of 25 positive); St. Joseph County, Michigan (June 1; 3 of 6 positive); Branch County, Michigan (June 4; 1 of 5 positive); Pike County, Missouri (June 7; 9 of 30 positive); and Eaton County, Michigan (June 15; 1 of 5 positive).

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Editorial Note: The origin of disease in the Amish infant from Pennsylvania has not yet been determined. The isolation of poliovirus type 2 from a recent TOPV recipient is not unusual and does not necessarily implicate that virus as the cause of disease. In a situation such as described here, when a person living in an epidemic area—and potentially exposed to wild poliovirus (type 1)—receives TOPV, more than 1 poliovirus type may be isolated from the stool. To explore this possibility, specimens are being retested in Pennsylvania and at CDC. Results of serologic tests may be useful in establishing the poliovirus type responsible for disease in this patient.

The circulation of wild poliovirus in areas without a paralytic case is not unusual, as the inapparent-to-apparent infection rate for poliovirus, though variable, can be quite high. For every 100 persons with poliovirus cultured from their stool, 90-95 will be asymptomatic; 4-8 will have "minor illness" (gastroenteritis, upper-respiratory-tract symptoms, or an influenza-like illness); 1 or 2 will have aseptic meningitis; and 0.1 to 1 will have paralytic disease (3).

Immunization campaigns for the Amish (who have a total U.S. population of approximately 75,000) are continuing. Of the 23 states now known to have Amish residents, 18 have achieved immunization levels of $\geq 50\%$ and 5 of these have achieved levels $\geq 90\%$. In the 3 states with the largest Amish populations (Ohio, Pennsylvania, and Indiana; total of 56,000 Amish), 46%-60% immunization levels have been achieved, and campaigns are continuing. Most states are trying to achieve immunization of at least 80% of their total Amish populations.

References

1. MMWR 28:275, 1979
2. MMWR 28:255, 1979
3. Horstmann DM: Clinical epidemiology of poliomyelitis. *Ann Intern Med* 43:526-533, 1955

St. Louis Encephalitis — Ohio, 1978

Five serologically documented cases of St. Louis encephalitis (SLE), 1 fatal, were reported from Ohio in 1978. All of the patients had onset of symptoms between September 16 and November 11. Two cases occurred in Urbana, in Champaign County, and 1 case occurred in each of the following areas: Rocky River, Cuyahoga County; Columbus, Franklin County; and Chillicothe, Ross County. Cases of SLE have been diagnosed in Columbus each year since the 1975 epidemic, which involved much of the Mississippi and Ohio River valleys; however, human cases had not been detected in the other 3 counties since that time.

In a statewide arbovirus surveillance program conducted from June through mid-September 1978, 6,081 avian blood samples were tested for SLE antibody by the hemagglutination-inhibition (HI) test. The resulting rate of seropositivity was 0.25%. A total of 39,204 *Culex* mosquitoes, tested on duck-embryo-cell culture, yielded a single isolate of SLE virus. The virus isolation was made from a pool of 50 *C. pipiens* collected at Cedar Bog, approximately 6.4 km south of Urbana, on July 20.

SLE Case-Cuyahoga County: The Cuyahoga County Health Department initiated a surveillance program (41 hospitals in the 6-county Cleveland metropolitan area) during the summer and fall of 1978 to monitor encephalitis-like illnesses. On September 19, a 23-year-old woman with a 1-day history of severe frontal headache and temperature of 39 C was examined and admitted to a hospital participating in the surveillance program. She reported minimal pain when flexing her neck, but otherwise her physical examination was unremarkable. Except for a brief visit, 3 weeks earlier, to a camping area in southern Ohio, she had no history of recent travel.

Laboratory results included a white blood cell (WBC) count of 9,800/mm³ with normal differential, a hemoglobin of 13.4 g/dl, and a normal chest X ray. Cerebrospinal fluid (CSF) contained 799 WBC/mm³ (99% polymorphonuclear leukocytes, 1% lymphocytes), a protein level of 50 mg/dl, and a glucose level of 55 mg/dl. The blood sugar level was 37 mg/dl. On examination of Gram-stained spinal fluid, numerous polymorphonuclear cells and 2 or 3 questionable gram-negative diplococci were seen, but blood and CSF cultures yielded no bacterial growth.

The patient was started on intravenous penicillin. On the night of admission she had a transient macular rash covering her extremities and experienced a left-sided, focal seizure. A repeat lumbar puncture after 48 hours revealed 160 WBC/mm³ (80% lymphocytes, 20% polymorphonuclear leukocytes) and a red blood cell count of 2,000/mm³. The protein level was 71 mg/dl, and the glucose, 67 mg/dl. Her blood sugar level was 110 mg/dl. No organisms were seen in the Gram-stained smear. On the fourth hospital day the patient became confused and rapidly deteriorated into a comatose state. At this stage, chloramphenicol was added. She remained febrile and developed a decerebrate posture and early signs of papilledema. On the seventh hospital day, she became hypotensive, had a cardiorespiratory arrest, and died.

At autopsy, the brain appeared grossly normal. Serum from the acute phase of illness had an HI antibody titer to SLE of <1:10 and a complement-fixing (CF) antibody titer of <1:8; serum collected on the seventh day had an HI titer of 1:20 and a CF titer of 1:32. Testing of 351 *C. pipiens* and serum specimens from 26 house sparrows from the areas frequented by the patient did not demonstrate SLE virus or other evidence of recent SLE activity.

SLE Field Studies, Champaign and Ross Counties: After the first reports of human SLE cases, which had occurred in the area in mid- to late September, field investigations were initiated to determine the extent of SLE infection in the mosquito and avian populations in Champaign and Ross counties. Resting mosquitoes were aspirated from

Encephalitis — Continued

culverts and storm sewers in Urbana and Chillicothe from October 23 through November 7, 1978. *C. pipiens* accounted for over 90% of collections in both cities. A single isolation of SLE virus was made from 7,381 mosquitoes collected from Urbana, and another, from 1,718 mosquitoes collected in Chillicothe. In both instances, virus was detected in a pool of 50 *C. pipiens*.

During the period October 24–December 1, 1978, avian serum samples were collected in Urbana and Chillicothe and at sites within an 18-km radius of both cities. Immature house sparrows accounted for over 97% of all specimens obtained. HI-testing revealed SLE seropositivity rates of 8.2% (33/401) in Urbana and 5.6% (11/196) in Chillicothe. Over one-third (34.1%) of all seropositive birds from Urbana and Chillicothe were found to have antibody titers of $\geq 1:120$, strongly suggesting recent infection with SLE virus. Seropositivity rates were substantially lower (0–0.5%) in birds collected 6–18 km from both cities, indicating that SLE activity was concentrated in the urban areas. The highest rate of seropositivity outside either city (2.5%) was detected at a farm located 7.1 km from Urbana and 1.6 km from Cedar Bog, the site from which the mosquitoes that originally yielded SLE virus were collected on July 20.

Reported by J Berner, MD, KV Gopalakrishna, MD, K Kapoor, MD, L Malm, MD, W Wilder, MD, Lutheran Medical Center, Cleveland, Ohio; OG Glasser, MD, J Jackson, RS, Cuyahoga County Board of Health; SW Gordon, ED Peterson, RL Berry, PhD, RA Restifo, JA Kertesz, MA Parsons, Vector-Borne Disease Unit, GT Bear, DVM, Veterinary Unit, TJ Halpin, MD, State Epidemiologist, Bur of Preventive Medicine, D Keiper, K Elliot, Bur of Laboratories, Ohio Dept of Health; Enteric and Neurotropic Viral Diseases Br, Viral Diseases Div, CDC.

Editorial Note: These observations suggest that SLE activity was concentrated in the locations associated with the human cases. The seropositivity rates of avian samples collected at points surrounding the Urbana and Chillicothe cases declined from greater than 5% to less than 1% within a 15-km radius. Similarly, geographically limited activity may be the reason mosquito and bird specimens collected in Cuyahoga County were negative.

Close, active surveillance was an important factor in establishing the cause of encephalitis in the Cuyahoga County patient. Most clinical cases of SLE are described in association with outbreaks, and fatalities in patients less than 40 years old are infrequently observed.

*International Notes***Cholera — Worldwide, 1978**

A total of 74,632 cases of cholera were reported, worldwide, for 1978, compared with 58,087 cases in 1977 and 66,020 in 1976. Cholera was more widespread in 1978, affecting 40 countries; this number is the maximum recorded since the beginning of the present pandemic in 1961.

Eight new countries were infected in 1978—the highest number in any 1 year since 1970 and 1971, when cholera first spread to the African continent. The newly infected

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Cholera — Continued

countries were Burundi, Congo, Rwanda, Zaire, Zambia, the Maldives, Nauru, and the United States.

Eighteen countries in Africa reported 23,317 cases, as compared with 12 countries reporting 8,388 cases in 1977. Nearly two-thirds of the reported cases were from Burundi and the United Republic of Tanzania, where large outbreaks occurred. Ten of these 18 countries did not report cholera in 1977. A marked decrease in the number of cases from 1977 was noted in Ghana, Liberia, Malawi, and Togo.

In Asia, 50,765 cases (22 of them imported) were reported by 19 countries. Although this situation appears very similar to that of 1977, when 48,937 cases were reported by 20 countries, in fact, most countries showed considerably decreased figures when compared with the previous year. On the other hand, 5 Asian countries that reported cholera in 1978 had not been infected in 1977. A large outbreak of 11,336 cases in the Maldives was rapidly brought under control by measures which included purifying the drinking water and establishing careful epidemiologic surveillance of cases. For the first time since 1973, a large outbreak, which involved 906 cases, occurred in Bahrain; this outbreak was unique in that the highest attack rates were in children under 1 year of age, especially those who were bottle-fed. Outbreaks also occurred in India and Thailand associated with post-monsoon flooding.

As in 1977, a small number of cases occurred in Japan (1). A small outbreak also occurred in the United States—the first on the North American Continent during the present pandemic (2). Nontoxigenic *Vibrio cholerae* organisms with some atypical characteristics were also isolated from the sewerage system of Santos, Brazil, where no cholera cases or carriers were identified. Cholera spread to yet another country in Oceania: a small outbreak of 38 cases occurred on Nauru.

Editorial Note: In at least 1 country where cholera vaccination was required from all travelers on entry, this measure failed to prevent the introduction of cholera. Consideration should be given to the cost-effectiveness of using medical and paramedical personnel to establish diarrheal disease surveillance—even if it is of the most elementary form—in preference to assigning such personnel to recognized ports of entry for the ritualistic examination of cholera vaccination certificates.

Reported by the World Health Organization in the Weekly Epidemiological Record 54(17), April 27, 1979.

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